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LEVEL STAMP

S P E C I F I C A T I O N

Background of the Invention

Field of the Invention

The present invention relates generally to spirit levels. More particularly, the invention concerns a modified spirit level that includes a retractable, pre-inked stamping member that can conveniently be used to mark a level line on a surface located adjacent the spirit level.

Discussion of the Prior Art

Spirit levels (hereinafter called levels for short) of various types are well known in the prior art. Such devices have long been used by carpenters, bricklayers and other craftsmen for obtaining a true level. The typical prior art level comprises a glass bubble tube mounted within a housing typically constructed of wood, plastic or metal. The bubble tube is filled almost to capacity with a spirit or non-freezing liquid. The air bubble that remains within the tube moves toward that end of the tube which is raised above true level. When the air bubble is centered within the bubble tube, the construction of the level is such that the top and bottom walls of the level are positioned at true level. Some prior art levels carry one or more

bubble tubes which enable the user to ascertain or to select the inclination of a surface or part relative to the horizontal and relative to the vertical.

United States patent No. 6,430, 827 issued to Ruther discloses a spirit level that includes means for applying marks to selected portions of pieces of furniture and other articles. The Ruther apparatus includes an elongated housing having a rectangular cross sectional outline and provided with registering elongation slots in its front and rear walls. At least one follower of the level has a main portion slidably installed in the housing and one or two pointers outwardly adjacent the slot in the front wall. The two end pieces of the housing are provided with bubble tubes and each follower has a passage for introduction of a stylus or other suitable marking tool which can be inserted at the front wall to extend outwardly through the slot in the rear wall of the housing.

The patent to Richardson No. 2,972, 816 relates generally to a device for aligning members with respect to each other and more particularly to a device for aligning to pieces of pipe at a predetermined angle with respect to each other. The device has bypass wall means for bypassing a fitting between the pieces of pipe.

Patent No. 746,070 issued to Gillner et al. discloses a center square having in combination there with a scratch-pin and level and guide pins to permit parallel scribing, either straight or circular.

The thrust of the present invention is to provide a uniquely modified spirit level that includes a retractable, pre-inked stamping member that can conveniently be used by the individual to mark a reference line such as a level line on a surface located adjacent the spirit level, such as a wall against which the level is engaged. There is no need to use a pencil. The stamp can be used with one hand thereby freeing up the other hand.

Summary of the Invention

It is an object of the present invention is to provide a spirit level which includes an easy to operate, built in stamping mechanism that can be used by the individual user to mark a level line on a surface located adjacent the spirit level, such as a wall against which the level is engaged.

Another object of the invention is to provide a level of the aforementioned character which can be manipulated by the user in the same manner as a standard level, but further exhibits the advantage of being able to use the level to mark on an adjacent surface a clearly discernible level line without the need to use a pencil.

Another object of the invention is to provide a modified spirit level which includes a plurality of conveniently located push pads that can be operated by only one hand of the user to move the pre-inked stamping member from a normally re-

tracted positioned into an extended marking positioned in engagement with a surface to be marked.

Another object of the invention is to provide a level of the character described in the preceding paragraph in which the pre-inked stamping member is saturated with disappearing ink so that the imprinted mark will disappear within a short time.

Another object of the invention is to provide a level of the class described which can be used to apply a mark to selected surfaces with a high degree of accuracy and one which can be readily manipulated by workmen following only a minimum amount of training.

Still another object of this invention is to provide a level wherein the housing and the pre-inked stamping member can be assembled of simple mass-produced parts at a reasonable cost.

By way of summary, the modified spirit level of the present invention comprises a housing having interconnected front, back, top and bottom walls defining an internal chamber, at least one bubble tube containing a liquid carried by the housing and an elongated stamping member also carried by the housing for movement between a first retracted position wherein at least a portion of the stamping member is disposed within the internal chamber and a second position wherein at least a portion of the stamping member extends outwardly from the front wall of

the housing. The modified spirit level also includes a novel operating mechanism that is carried by the housing for moving the elongated stamping member from the first retracted position to the second position. In one form of the invention, the operating means comprises a plurality of spaced apart push pads that are carried by the housing and are operably associated with the stamping member. The push pads are individually movable between a first, at rest position and a second, operating position wherein the stamping member is moved toward the second position. Biasing means, in a form of a plurality of coil springs, are operably associated with the operating means for yieldably resisting movement of the elongated stamping member toward the second, stamping position.

Brief Description of the Drawings

Figure 1 is a rear view of one form of the modified spirit level of the present invention.

Figure 2 is an enlarged view, partly in cross section, taken along lines 2-2 of figure 1.

Figure 3 is a greatly enlarged, cross-sectional view of the area designated in figure 2 as "3-3".

Figure 4 is a foreshortened view of the level line marked on the surface adjacent the front of the spirit level.

Figure 5 is a front view of the spirit level shown in figure 1.

Figure 6 is a cross-sectional view taken along lines 6-6 of figure 5.

Figure 7 is an enlarged, cross-sectional view taken along lines 7-7 of figure 6.

Figure 8 is an enlarged, cross-sectional view taken along lines 8-8 of figure 6.

Figure 9 is an enlarged, cross-sectional view taken along lines 9-9 of figure 6.

Figure 10 is an enlarged, cross-sectional view taken along lines 10-10 of figure 6.

Figure 11 is an enlarged, fragmentary, cross-sectional view similar to figure 6, but showing the operation of the device to move the pre-inked stamp pad into engagement with a surface to be marked with a level line.

Figure 12 is a generally perspective, fragmentary view of a portion of the pre-inked stamp pad of one form of the invention.

Description of the Invention

Referring to the drawings and particularly to figures 1 through 7, one form of the level stamp of the present invention is there are illustrated. The level stamp here comprises a housing 14 having interconnected front, back, top and bottom

walls 16, 18, 20, and 22 respectively defining an internal chamber 24 (figures 2 and 6). Carried by housing 14 are first second and third longitudinally spaced apart bubble tubes 26, 28 and 30 respectively, each containing a non freezing liquid "L". As indicated in figure 1, bubble tube 26 extends angularly with respect to a top and bottom walls 20 and 22, bubble tube 28 extends substantially parallel to the top and bottom walls and bubble tube 30 extends substantially vertically relative to the top and bottom walls.

An elongated stamping member 32 having an inking segment 32a is carried by housing 14 proximate top wall 20. In a manner presently to be described, stamping member 32 is movable between a first retracted position, such is that shown in figure 7, wherein at least a portion of said stamping member is disposed within said internal chamber and a second position, such as that shown in figure 3, wherein at least a portion of segment 32a of the stamping member extends outwardly from the front wall of the housing.

Operating means of a character next to be described are carried by housing 14 for moving elongated stamping member 32 from the first retracted position to the second position. In the present form of the invention these novel operating means comprise a first push bar 34 that is carried within internal chamber 24 for movement between a first position shown in figure 6 and a second position shown in figure 11. As illustrated in figures 6 and 11, first push bar 34 is in engagement

with the left-hand portion 32a, as viewed in figure 6, of the stamping member 32. Operating associated with first push bar 34 are first and second push pads 36 and 38 that are carried by housing 14. Push pads 36 and 38, which are connected to first push bar 34 by threaded connectors 39 and 41, are movable between the first, at rest position shown in figure 6 and the second, operating position shown in figure 11 to cause push bar 34 to move toward the second position shown in figure 11. Biasing means, shown here as a conventional coil spring 40, which is operably associated with the first push bar 34, functions to yieldably resist movement of the push bar between the first position and the second position.

In the form of the invention shown in the drawings, the level further includes first guide means carried within said internal chamber of said housing for guiding movement of first push bar 34 between the first and said second positions. The first guide means here comprises a pair of longitudinally spaced guideways 44 that are mounted within internal chamber 24 and a pair of guide rods 46 that are connected to first push bar 34. As illustrated in figure 11, guide rods 46 are typically movable within the guideways 44 so as to control travel of the push bar within chamber 24.

In the present form of the invention the novel operating means also comprise a second push bar 48 that is carried within internal chamber 24 for movement between a first position shown in figure 6 and a second position shown in figure 11.

As best seen in figures 6 and 11, second push bar 48 is in engagement with the right-hand portion 32b of the stamping member 32. Operating associated with second push bar 48 are first and second push pads 50 and 52 that are carried by housing 14. Push pads 50 and 52, which are connected to second push bar 48 by threaded connectors 53 and 55, are movable between the first, at rest position shown in figure 6 and the second, operating position shown in figure 11 to cause push bar 48 to move toward the second position shown in figure 11. Biasing means, shown here as a conventional coil spring 54, which is operably associated with the second push bar 48, and functions to yieldably resist movement of the second push bar between the first position and the second position.

In the form of the invention shown in the drawings, the level further includes second guide means carried within said internal chamber of said housing for guiding movement of the second push bar 48 between the first and said second positions. The second guide means here comprises a pair of longitudinally spaced guideways 56 that are mounted within internal chamber 24 and a pair of guide rods 58 that are connected to second push bar 48. As illustrated in figure 11, guide rods 58 are telescopically movable within the guideways 56 so as to control travel of the second push bar within chamber 24.

In using the apparatus of the invention, the front side 16 of the level is placed in engagement with the wall "W" which is to be marked in a manner shown

in figures 2 and 11. Using the appropriate bubble tube, the level is next oriented into the desired position. For example, in the configuration shown in figure 11, the center bubble tube 28 has been used to bring the upper surface 20 of the level into true level. In this position, the stamp pad 32 is in the retracted position shown in figure 6. To then apply a mark, such as the mark "M" shown in figure 4 to the wall "W", a pressure is exerted on either of the push pads 36 or 38 in the direction of the arrows in figure 11. This pressure, which is exerted against the urging of coil spring 40, will cause push bar 34, along with and the stamp pad 33, to move from the retracted position into the extended position shown in figure 11. As the stamp pad moves into the extended position its travel will be guided by the first guide means of the invention. Upon the inked marking segment of 32a (figure 12) of the stamp member engaging the wall "W", the mark "M" will be imprinted on the wall in the manner shown in figure 4. The marking portion of 32a of the stamp member, which can be constructed from felt, rubber, plastic or the like, can be pre-saturated with either conventional ink or with disappearing ink such as that readily commercially available from a number of different printing supply companies. When the disappearing ink is used, the mark will of course disappear from the wall after the passage of time.

It is to be understood that the mark can be imprinted on the wall in the manner described in the preceding paragraphs by also pushing on either or both of the

push pads 50 and 52 against the urging of spring 54. When this is done, push bar 48, along with and the inked segment 32a, will move from the retracted position shown in figure 6 into the extended position. As the stamp pad moves into the extended position its travel will be guided by the second guide means of the invention which is of the character previously described. Upon the inked marking segment of 32a (figure 12) of the stamp member engaging the wall "W", the mark "M" will be imprinted on the wall in the manner shown in figure 4.

Having now described the invention in detail in accordance with the requirements of the patent statutes, those skilled in this art will have no difficulty in making changes and modifications in the individual parts or their relative assembly in order to meet specific requirements or conditions. Such changes and modifications may be made without departing from the scope and spirit of the invention, as set forth in the following claims.